

## Industrial Fact Sheet

### Summary of Proposed Permit Changes:

1. Page 2: List of additional outfalls was added which includes the new outfalls.
2. Pages 3 through 5: Permit limits were revised based on the reviews of the current water quality and the existing effluent quality.
3. Page 7: Whole Effluent Toxicity requirement.
4. Page 8: A new Schedule of Compliance for priority pollutant sampling.
5. Page 9: Updated special conditions for Best Management Practices.
6. Page 12: PCB requirements which were listed as footnote 5 in the existing permit.
7. Page 13: Shorter version of the existing discharge notification.
8. Page 14: Updated monitoring flow diagram included.

### Treatment Plant Description:

Outfall 001: Wastewater type consists of springs, stormwater, AC condensate, leak testing condensate, infiltration, cooling, and drinking water fountains. Wastewater flows in outfall 001 wet well is pumped to 001A for treatment of VOCs and discharged via the 001A outfall. Any overflows exceeding the design capacity of the air strippers is discharged via outfall 001.

Outfall 001A: Wastewater type consists of Air Stripper Treatment Plant Effluent

Outfall 002: Wastewater type consists of springs, stormwater, AC condensate, leak testing condensate, infiltration, cooling, and drinking water fountains. Wastewater flows in outfall 002 wet well is pumped to 001A for treatment of VOCs and discharged via the 001A outfall. Any overflows exceeding the design capacity of the air strippers is discharged via outfall 002.

Outfalls 003, 004: These outfalls are to be installed as part of the clean stormwater diversion system and are to be installed and sampled pursuant to the Schedule of Compliance on page 8 of this Permit. No monitoring or effluent limits are included at this time.

### Background Information:

The facility began manufacturing activities in 1950 but manufacturing operations were closed in 2004. A few of the remaining operations at this site are warehousing, engineering laboratories, legal, finance, purchasing, and human resources. The current SPDES permit **NY0001163** for the **Carrier Corporation** became effective on **11/01/2004**, and has been administratively renewed on **11/01/2009**. Wastewater discharges from this facility consist of storm water via outfalls 001 and 002, and treated stormwater via outfall 001A. Sanitary, boiler, and laboratory process wastewater is sent to the POTW.

The Department of Environmental Conservation has initiated a modification to the facility's SPDES permit, pursuant to 6 NYCRR Part 750-1.18, New York State's Environmental Benefit Permit Strategy (EBPS). The facility currently has an EBPS score of **135** and a ranking of **31 of 825**. The EBPS ranking detail is provided in Appendix B. In response to the Department's **July 16, 2010**, Request for Information (RFI) under the EBPS system, the **Carrier Corporation**

provided a SPDES NY-2C permit application and sampling data as requested in the RFI for the **Carrier Corporation on October 18, 2010.**

Sampling requested included:

- Conventional parameters which include: BOD<sub>5</sub>, COD, Dissolved Oxygen, TSS, TDS, Settleable Solids, Oil & Grease, Total Organic Nitrogen, Ammonia (N), Nitrate, Nitrite, Total Phosphorus, Flow Rate, Temperature, pH, Hardness (as CaCO<sub>3</sub>), Total Residual Chlorine, Fecal Coliform, Total Coliform, E. coli, and Enterococci.
- 13 Priority Pollutant Metals, Total Cyanide and Total Phenols
- Volatiles (EPA Method 624)
- Acid Compounds
- Base Neutral
- Mercury
- PCBs (EPA Method 608)

A review of the facility's Discharge Monitoring Reports from **11/30/07** to **10/31/10** shows that the following exceedances of Action Levels:

Date of Exceedances	Parameter	DMR Value	Reported Value	Unit
10/31/08	Manganese	0.3	1.8	mg/l
1/31/08			0.49	mg/l
7/31/08			1.6	mg/l
4/30/10			0.56	mg/l
7/31/10			0.55	mg/l
1/31/10	Oil & Grease	15	16.4	mg/l
12/31/08	pH		Not reported	SU

### Discharge Composition:

The Appendix C Table presents the existing effluent quality of the **Carrier Corporation**. The average and maximum concentration and mass reported are based on three (3) years from **11/30/07** to **10/31/10** of Discharge Monitoring Report (DMR) data submitted by the permittee. Additional pollutants detected in the effluent were reported in the SPDES NY-2C permit application.

### Receiving Water:

Outfalls 001, 001A, and 002, located at N 43° 05' 10.05", W76° 04' 59.55"; N 43° 05' 11", W 76° 05' 55"; and N 43° 05' 11.70", W76° 04' 17.33" respectively discharge into Sanders Creek. Sanders Creek is classified as Class C by the Department with the following beneficial uses: these waters shall be suitable for fish propagation and survival. The water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.

Outfall No.	Flow Rate (MGD)	Latitude	Longitude	Receiving Water	Water Class
001	0.558	N 43° 05' 10.05"	W76° 04' 59.55"	Sanders Creek	C
001A	1.5	N 43° 05' 11"	W 76° 05' 55"	Sanders Creek	C
002	0.436	N 43° 05' 11.70"	W76° 04' 17.33"	Sanders Creek	C

Additional receiving water information for **Sanders Creek** is as follows:

**pH (SU):** 7.5

**Temperature (°C):** 25

**Hardness (mg/L):** 350

#### **Dilution/Mixing Zone Analysis**

Mixing zone analysis is conducted in accordance with the following documents:

1. EPA T.S.D, entitled "Water Quality Based Toxics Control," dated March, 1991.
2. EPA Region VIII "Mixing Zones and Dilution Policy", dated December, 1994.
3. TOGS 1.3.1, entitled "Total Maximum Daily Loads and Water Quality Based Effluent Limits."

#### **Receiving Water**

**7Q10 Flow:** 0.485 MGD

**Source:** Discharge per drainage area ratio of bulletin 74 Gauging Station No. 04240115, Ley Creek near Syracuse, applied to drainage area tributary to outfalls plus an average cooling water discharge of 0.345 MGD from New Process Gear (NY 000 1384) upstream of Carrier Corp.

**30Q10:** Not Available

**Source:** -

**Stormwater Outfall 001 Dilution:** ~1:1 (estimated)

**Stormwater Outfall 002 Dilution:** ~1:1 (estimated)

**Outfall 001A Chronic Dilution:** <1:1

#### **303(d) Impaired Waterbody Information**

**Year Listed:** 2008

**Cause/Pollutant:** pathogens, phosphorus, ammonia and cyanide

**Source:** CSO's, urban runoff, industrial, landfill/land disposal

**TMDL Status:** Deferred pending implementation/evaluation of other restoration measures

303(d) waters are identified as not meeting State water quality standards and requiring the development of a TMDL. Sanders Creek was listed on Part 3c of the 2008 303(d) list for pathogens, phosphorus, ammonia and cyanide. Part 3c identifies waterbodies for which TMDL development may be deferred pending implementation/evaluation of other restoration measures.

Ley Creek is also included in the listing for Southern Onondaga Lake which was listed in Part 2b of the 2008 303(d) for impairments due to dioxin, mercury and PCBs. Part 2b identifies waterbodies impaired by fish consumption advisories.

The Department may reopen the permit, pursuant to 6 NYCRR Part 621, to implement waste load allocations for any of the pollutants of concern if a Total Maximum Daily Load (TMDL) for Sanders Creek is completed.

In 2002, DEC conducted a macroinvertebrate survey. The results indicated elevated levels of PCBs in crayfish taken in Sanders Creek in the vicinity of Carrier Corp. Carrier conducted sediment sampling in October 2009. Two aroclors (1254 and 1260) were detected. The sample results for PCBs are summarized here:

Aroclor 1254: Range 80.8 ug/kg to 383 ug/kg

Aroclor 1260: Range: 45 ug/kg to 168 ug/kg.

### **Effluent Limitations:**

The NYSDEC developed the permit limits and other requirements in accordance with Clean Water Act, State and federal regulations, and TOGS 1.2.1. In general, the Clean Water Act requires that the effluent limits for a particular pollutant be the more stringent of either the technology-based or water quality-based limits. A technology-based effluent limit requires a minimum level of treatment for industrial point sources based on currently available treatment technologies. A water quality-based effluent limit (WQBEL) is designed to ensure that the water quality standards of a receiving water are being met. The table detailing the effluent limits is presented on Pages 4 - 6 of the draft permit. More information on the derivation of technology- and water quality-based effluent limits is presented in Appendix B.

### **Monitoring Requirements:**

Section 308 of the Clean Water Act and federal regulations (40 CFR 122.44(i)) require that monitoring be included in permits to determine compliance with effluent limitations. Additional effluent monitoring may also be required to gather data to determine if effluent limitations may be required. The **Carrier Corporation** is responsible for conducting the monitoring and for reporting results on Discharge Monitoring Reports (DMRs) to NYSDEC.

Pages 5-6 of the draft permit present the monitoring requirements for the facility. Monitoring frequency is based on the minimum sampling necessary to adequately monitor the facility's performance. For industrial facilities, sampling frequency is based on guidance provided in TOGS 1.2.1.

### **Other Permit Conditions:**

#### *Compliance Schedules*

Permittee will be required to perform a priority pollutant scan of effluent discharges from new outfalls 003, 004, 005. Sampling must be performed 12 months following the complete construction of the diversion system. Sample results will be used to establish monitoring requirements for these outfalls.

#### *Best Management Practices*

The permittee is required to implement a Best Management Practices (BMP) plan that prevents, or minimizes the potential for, the release of significant amounts of toxic or hazardous pollutants to State waters. The BMP plan requires annual review by the permittee.

**Other Legal Requirements:***Discharge Notification Act*

In accordance with Discharge Notification Act (ECL 17-0815-a), the permittee is required to post a sign at each point of wastewater discharge to surface waters. The permittee is also required to provide a public repository for DMRs as required by the SPDES permit.

**Antidegradation Policy**

New York State implements the antidegradation portion of the CWA based upon two documents:

1. Organization and Delegation Memorandum #85-40, entitled "Water Quality Antidegradation Policy," signed by the Commissioner of NYSDEC, dated September 9, 1985.
2. TOGS 1.3.9, entitled "Implementation of the NYSDEC Antidegradation Policy – Great Lakes Basin (Supplement to Antidegradation Policy dated September 9, 1985)."

A SPDES permit cannot be issued that would result in the water quality criteria being violated. The draft permit for the facility contains effluent limits which ensure that the existing beneficial uses of Sanders Creek will be maintained.

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## **APPENDIX A: BASIS FOR EFFLUENT LIMITATIONS**

### **Statutory and Regulatory Basis for Limits:**

Sections 101, 301(b), 304, 308, 401, 402, and 405 of the Clean Water Act (CWA) provide the basis for the effluent limitations and other conditions in the draft permit. The NYSDEC evaluates discharges with respect to these sections of the CWA and the relevant SPDES regulations to determine which conditions to include in the draft permit.

In general, the permit writer does a statistical analysis of the monitoring data provided in permittee-submitted discharge monitoring reports (DMRs). Pollutant screening data as required in the Request for Information is also reviewed to determine the presence of additional contaminants that should be considered for inclusion in the permit. The permit writer determines the technology-based limits that must be incorporated into the permit in accordance with federal and state rules, regulations, and technical guidance. The Department then evaluates the effluent quality expected to result from these controls to determine if any exceedances of water quality standards in the receiving water would result. If there is a reasonable potential for exceedances to occur, water quality-based limits must be included in the permit. The draft permit limits reflect whichever requirements, technology or water quality, are more stringent. The proposed limits are located on Pages 4 -7 of the draft permit. This Appendix describes the technology-based and water quality-based evaluation for the Carrier Corporation.

### **Technology-Based Evaluation:**

Section 301(b) and 402 of the CWA require technology-based controls on effluents. This section of the Clean Water Act requires that, by March 31, 1989, all permits contain effluent limitations which: (1) control toxic pollutants and nonconventional pollutants through the use of “best available technology economically achievable” (BAT), and (2) represent “best conventional pollutant control technology” (BCT) for conventional pollutants. In no case may BCT or BAT be less stringent than “best practical control technology currently available” (BPT), which is the minimum level of control required by Section 301(b)(1)(A) of the Clean Water Act. After March 31, 1989, all permits for new sources are required to contain effluent limitations for all categories of point sources which control toxic pollutants through the use of best available demonstrated technology (BADT). BADT is specifically applied through New Source Performance Standards (NSPS).

For certain industrial sectors, Effluent Guidelines have not been promulgated by USEPA. In other instances, facilities that are subject to federal regulations may have substances in their discharges that are not explicitly limited by the regulations. To determine if these substances require technology-based effluent limits, the permit writer must apply Best Professional Judgment (BPJ). The authority for BPJ is contained in Section 402(a)(1) of the CWA, which authorizes the Department to issue a permit containing “such conditions as the Administrator determines are necessary to carry out the provisions of the Act.” The NPDES regulations in 40 CFR 125.3 state that permits developed on a case-by-case basis under Section 402(a)(1) of the CWA must consider:

1. Reviewing Effluent Guidelines for sectors with similar pollutants,
2. Reviewing limitations developed at similar facilities, and
3. Any unique factors relating to the applicant.

#### **Pollutant-Specific Analysis for Technology Based Effluent Limits:**

This section outlines the basis for each of the technology based effluent limitations in the Carrier Corporation's draft permit.

#### **Water Quality-Based Evaluation:**

In addition to the technology-based limits previously discussed, the NYSDEC evaluated the discharge to determine compliance with Section 301(b)(1)(C) of the Clean Water Act. This section requires the establishment of limitations in permits necessary to meet water quality standards by July 1, 1977.

The regulations in 40 CFR 122.44(d)(1) implement Section 301(b)(1)(C) of the Clean Water Act. These regulations require that SPDES permits include limits for all pollutants or parameters which "are or may be discharged at a level which will cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality. The limits must be stringent enough to ensure that water quality standards are met and must be consistent with any available wasteload allocation (WLA).

#### ***Water Quality Criteria***

Water quality regulations detailed in 6 NYCRR Parts 700-706 and ambient water quality standards and guidance values specified in TOGS 1.1.1 were applied to the **Carrier Corporation** discharge. Specific application of the regulations and standards is detailed in Table 2 of this Appendix.

#### ***Reasonable Potential Evaluation***

Reasonable potential analysis is the process for determining whether a discharge causes, has the reasonable potential to cause, or contributes to an excursion above New York State water quality criteria for toxic pollutants. When conducting a reasonable potential analysis for each pollutant of concern, factors such as receiving water classification and corresponding water quality criteria and guidance values, pollutant concentration in the effluent, dilution available in the receiving water, background concentrations and additional upstream and downstream dischargers containing the pollutant of concern are used to quantify the receiving water quality. If the expected concentration of the pollutant of concern in the receiving water exceeds the ambient water quality criteria or guidance value then there is reasonable potential that the discharge may cause or contribute to a violation of the water quality standard, and a water quality-based effluent limit or load allocation for the pollutant is required. Calculations performed specifically for the effluent of this facility can be found at the end of this Appendix.

#### ***Procedure for Deriving Water Quality-Based Effluent Limits (WQBELs)***

The TMDL process is a water quality based approach to implementing water quality standards. It is applied to an entire watershed or drainage basin whenever possible, but may also be applied

to waterbody segments with individual or multiple pollutant sources. The TMDL analysis is carried out separately for each pollutant. It allows for the consideration of all sources of the pollutant including point sources, non-point sources, atmospheric deposition and natural background. Dependant on the complexity of the issue and the amount of data available, the analysis can be relatively simple such as a desk-top, mass-balance calculation or it can be exacting and detailed by using complex, multidimensional water quality models. The TMDL process serves a dual function in the permit development process. It provides the basis for the reasonable potential analysis. If the reasonable potential analysis indicates that the pollutant of concern has the potential to cause or contribute to an excursion of water quality standards, the TMDL process is then used to determine the WQBELs for all sources of the pollutant to assure compliance with the standards.

### **Pollutant-Specific Analysis for Water Quality Based Effluent Limits:**

This section outlines the basis for each of the Water Quality Based Effluent Limitations in the Carrier Corporation's draft permit.

#### **Outfalls 001 & 002**

**pH:** The water quality standard for pH is no less than 6.5 nor more than 8.5. The TBEL of 6.0 - 9.0 is deemed protective of the water quality standard.

**Iron:** The water quality guidance value for iron is 1.0 mg/l. The calculated WQBEL is 2.0 mg/l. Monitoring conducted by Carrier Corp. shows elevated iron concentrations in groundwater, rainwater and Sanders Creek upstream of the discharge that exceed the WQBEL. As such it is recommended that the monitor only requirement for iron in the current permit is continued.

**Zinc:** The water quality standard for zinc is 0.72 mg/l and is based on receiving water hardness. The calculated WQBEL is 1.4 mg/l.

**PCBs:** The water quality standard for PCBs is 0.000001 ug/l and applies to the sum of all aroclors. Since Ley Creek is included in the southern Onondaga Lake 2010 303(d) listing for fish consumption due to PCB contamination, the PCB std. will be applied as the WQBEL.

**Copper:** The water quality standard for copper is 0.07 mg/l and is based on receiving water hardness. The calculated WQBEL is 0.14 mg/l.

**Lead:** The water quality standard for lead is 0.06 mg/l and is based on receiving water hardness. The calculated WQBEL is 0.12 mg/l.

**Manganese:** A class C water quality standard or guidance value for manganese does not exist.

**Nickel:** The water quality standard for nickel is 0.35 mg/l and is based on receiving water hardness. The calculated WQBEL is 0.70 mg/l.



**Trichloroethene:** The water quality standard for trichloroethene is 0.04 mg/l. The calculated WQBEL is 0.08 mg/l.

**Chloroform:** A class C water quality standard or guidance value for chloroform does not exist.

**Trans-1,2-dichloroethene:** A class C water quality standard or guidance value for trans-1,2-dichloroethene does not exist.

**1,1,1-Trichloroethane:** A class C water quality standard or guidance value for 1,1,1-trichloroethane does not exist.

**Vinyl Chloride:** A class C water quality standard or guidance value for vinyl chloride does not exist.

**Oil & Grease:** The water quality standard for oil and floating substances is “no residue attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease.” The TBEL of 15 mg/l is deemed protective of this narrative water quality standard.

#### **Outfall 001A**

**pH:** The water quality standard for pH is no less than 6.5 nor more than 8.5. The TBEL of 6.0 - 9.0 is deemed protective of the water quality standard.

**Iron:** The water quality guidance value for iron is 1.0 mg/l. The calculated WQBEL is 1.3 mg/l. Monitoring conducted by Carrier Corp. indicates elevated iron concentrations in groundwater, rainwater and Sanders Creek upstream of the discharge that exceed the WQBEL. As such it is recommended that the monitor only requirement for iron in the current permit is continued.

**Zinc:** The water quality standard for zinc is 0.72 mg/l and is based on receiving water hardness. The calculated WQBEL is 0.95 mg/l.

**PCBs:** The water quality standard for PCBs is 0.000001 ug/l and applies to the sum of all aroclors. Since Ley Creek is included in the southern Onondaga Lake 2010 303(d) listing for fish consumption due to PCB contamination, the PCB std. will be applied as the WQBEL.

**Copper:** The water quality standard for copper is 0.07 mg/l and is based on receiving water hardness. The calculated WQBEL is 0.09 mg/l.

**Lead:** The water quality standard for lead is 0.06 mg/l and is based on receiving water hardness. The calculated WQBEL is 0.08 mg/l.

**Manganese:** A class C water quality standard or guidance value for manganese does not exist.

**Nickel:** The water quality standard for nickel is 0.35 mg/l and is based on receiving water hardness. The calculated WQBEL is 0.46 mg/l.

**Trichloroethene:** The water quality standard for trichloroethene is 0.04 mg/l. The calculated WQBEL is 0.053 mg/l.

**Chloroform:** A class C water quality standard or guidance value for chloroform does not exist.

**Trans-1,2-dichloroethene:** A class C water quality standard or guidance value for trans-1,2-dichloroethene does not exist.

**1,1,1-Trichloroethane:** A class C water quality standard or guidance value for 1,1,1-trichloroethane does not exist.

**Vinyl Chloride:** A class C water quality standard or guidance value for vinyl chloride does not exist.

**Oil & Grease:** The water quality standard for oil and floating substances is “no residue attributable to sewage, industrial wastes or other wastes, nor visible oil film nor globules of grease.” The TBEL of 15 mg/l is deemed protective of this narrative water quality standard.

### **Whole Effluent Toxicity (WET) Testing**

Whole effluent toxicity (WET) tests are laboratory tests that replicate to the greatest extent possible the total effect and actual environmental exposure of aquatic life to effluent toxicants without requiring the identification of specific toxicants. WET tests use small vertebrate and invertebrate species to measure the aggregate toxicity of an effluent. There are two different durations of toxicity tests: acute and chronic. Acute toxicity tests measure survival over a 96-hour test exposure period. Chronic toxicity tests measure reductions in survival, growth, and reproduction over a 7-day exposure.

Federal regulations at 40 CFR 122.44(d)(1) require that permits contain limits on whole effluent toxicity when a discharge has reasonable potential to cause or contribute to an exceedence of a water quality standard.

Per TOGS 1.3.2, WET testing is required for outfall 001A due to the following:

- there is the presence of substances in the effluent for which ambient water quality criteria do not exist.
- there are uncertainties in the development of TMDLs, WLAs, and WQBELs, caused by inadequate ambient and/or discharge data, high natural background concentrations of pollutants, available treatment technology, and other such factors.
- there is the presence of substances for which WQBELs are below analytical detectability.
- there is the possibility of complex synergistic or additive effects of chemicals, typically when the number of metals or organic compounds discharged by the permittee equals or

exceeds five.

- previous toxicity testing performed by NYSDEC or USEPA indicated a problem.

A chronic action level of 1.17 TUC for invertebrates/vertebrates is recommended per the Departments Toxicity Testing Unit. The requirements for the WET testing are explained on Page 7 of the permit.

**REFERENCES:**

1. 6 NYCRR Parts 700-706
2. 40 CFR Parts 122 and 125
3. EPA Technical Support Document, *Water Quality Based Toxics Control*, March, 1991.
4. EPA Region VIII *Mixing Zones and Dilution Policy*, December, 1994.
5. NYSDEC Division of Water, Technical & Operational Guidance Series (TOGS). Available at <http://www.dec.ny.gov/regulations/2652.html>:
  - a. 1.1.1, *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*, June 1998
  - b. 1.2.1, *Industrial Permit Writing*, February 2000
  - c. 1.3.1, *Total Maximum Daily Loads and Water Quality Based Effluent Limits*, July 1996
6. Application Form 2A submitted by the permittee on August 27, 2009

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## APPENDIX B

### Individual Outfall Data Summaries and Permit Limit Development:

#### 1. Existing and Technology Based Effluent Limit:

Technology Based Effluent Limit (TBEL) is set based upon an evaluation of Best Available Technology Economical Achievable (BAT), Best Conventional Pollutant Control Technology (BCT), Best Practicable Technology Currently Available (BPT), and Best Professional Judgment (BPJ). BPJ limits may be set using any reasonable method that takes into consideration the criteria set forth in 40 CFR 125.3.

For the Existing Effluent Quality, the statistical methods utilized are in accordance with TOGS 1.2.1 and the USEPA, Office of Water, Technical Support Document For Water Quality-based Toxics Control, March 1991, Appendix E. Generally based on lognormal analysis. Statistical calculations were not performed for parameters with insufficient data. Generally, ten or more data points are needed to calculate percentiles (See TOGS 1.2.1 Appendix D). Two or more data points are necessary to calculate an average and a maximum. Non-detects were excluded in the statistical calculations.

Monitoring data collected during the following time period of 11/31/07 through 10/31/10 was used to calculate statistics and these data were taken from the Discharge Monitoring Reports.

PERMITTEE: Carrier Corporation  
FACILITY: Carrier Corporation

DATE: May 18, 2011  
SPDES NO.: NY0001163

Outfall# 001, 002, & 001A

Effluent Parameter (Units) (conc.- mg/l, ug/l, ng/l Or mass - lbs/d or g/d)	Existing Effluent Quality				Technology Based Effluent Limit				
	quality/conc.		mass		conc. DA/DM	conc. AL	Type	PQL Conc.	Basis or Justification
	Avg/Max	95%/99%	Avg/Max	95%/99%					
<b>Outfall 001</b>									
Flow Rate, units = MGD	Average	0.558	Maximum	2.76	Monitor				
pH (SU)	Minimum	8.2	Maximum	8.7	6.0 – 9.0				6NYCRR 703.4
<b>Metals</b>									
Iron, Total, mg/l	6.40/1.09	1.58/7.32			Monitor			0.03	
Zinc, Total	0.780/0.107	0.14/0.57			Monitor			0.0002	
Copper, Total, mg/l	0.02/0.02	0.02/0.02				0.079		0.004	
Lead, Total, mg/l	0.017/0.005	0.01/0.02				0.1		0.004	
Manganese, Total, mg/l *	0.028/0.045					0.08		0.004	
Nickel, Total, mg/l *	0.03/0.03					0.2		0.004	
<b>Organic Compounds</b>									
PCB, Aroclor 1242,ug/l					Monitor/0.2			0.2	
PCB, Aroclor 1248, ug/l					Monitor/0.2			0.2	
PCB, Aroclor 1254,ug/l					Monitor/0.2			0.2	
PCB, Aroclor 1260,ug/l					Monitor/0.2			0.2	
Trichloroethene	<b>0.20/0.027</b>	<b>0.09/0.12</b>			Monitor			0.0005	
Chloroform*	0.001/0.001					0.008		0.0002	
Trans-1,2-dichloroethene, mg/l *	0.001/0.001					0.006		0.0004	

PERMITTEE: Carrier Corporation  
FACILITY: Carrier Corporation

DATE: May 18, 2011  
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1,1,1-Trichloroethane, mg/l *	0.001/0.001					0.020		0.0002	
Vinyl Chloride, mg/l *	0.001/0.001					0.01		0.0007	
<b>NOTE: *Only three data points were available in the DMR so a statistical analysis was not performed</b>									
<b>Others</b>									
Oil & Grease, mg/l	7.30/5.16					15			
<b>Outfall 002</b>									
Flow Rate, units = MGD, Daily Average	Average	0.436	Maximum	1.95	Monitor				
Flow Rate, units = MGD, Daily Maximum					Monitor				
pH (SU)	Minimum	8.2	Maximum	8.7					6NYCRR 703.4
<b>Metals</b>									
Iron, Total, mg/l	0.738/6.40	0.89/3.62			Monitor			0.03	
Zinc, Total	0.091/0.54	0.12/0.45			Monitor			0.0002	
Copper, Total, mg/l	0.02/0.02	0.02/0.02				0.15		0.004	
Lead, Total, mg/l	0.005/0.017	0.01/0.02				0.10		0.004	
Manganese, Total, mg/l						0.10		0.004	
Nickel, Total, mg/l						0.20		0.004	
<b>Organic Compounds</b>									
PCB, Aroclor 1242,ug/l					Monitor/0.2			0.2	
PCB, Aroclor 1248, ug/l					Monitor/0.2			0.2	
PCB, Aroclor 1254,ug/l					Monitor/0.2			0.2	
PCB, Aroclor 1260,ug/l					Monitor/0.2			0.2	
Trichloroethene, mg/l	0.063/0.39	0.09/0.39			Monitor			0.0005	
Chloroform, mg/l						0.063		0.0002	
Trans-1,2-dichloroethene, mg/l	0.005/0.02	0.01/0.04				0.05		0.0004	

1,1,1-Trichloroethane, mg/l						0.065		0.0002	
Vinyl Chloride, mg/l						0.01		0.0007	
<b>Others</b>									
Oil & Grease	5.47/12.7								
<b>Outfall 001A</b>									
Flow Rate, units = MGD, Daily Average	Average	0.266	Maximum	0.998					
Flow Rate, units = MGD, Daily Maximum	Average	0.805	Maximum	1.5					
pH (SU)	Minimum	8.2	Maximum	8.7		Range			6NYCRR 703.4
<b>Metals</b>									
Iron, Total, mg/l	2.24/12	2.92/11.11			Monitor			0.03	
Zinc, Total					Monitor			0.0002	
Copper, Total, mg/l	0.033/0.098	0.04/0.09				0.24		0.004	
Lead, Total, mg/l	0.056/0.012	0.01/0.03				0.10		0.004	
Manganese, Total, mg/l	0.514/1.80	0.77/3.41				0.30		0.004	
Nickel, Total, mg/l	0.031/0.47	0.03/0.04				0.20			
<b>Organic Compounds</b>									
PCB, Aroclor 1242,ug/l	0.068/0.5	0.07/0.16			Monitor/0.2			0.2	
PCB, Aroclor 1248, ug/l	0.068/0.5	0.07/0.16			Monitor/0.2			0.2	
PCB, Aroclor 1254,ug/l	0.068/0.5	0.07/0.16			Monitor/0.2			0.2	
PCB, Aroclor 1260,ug/l	0.369/2.5	0.54/2.42			Monitor/0.2			0.2	
Trichloroethene, mg/l	0.0018/0.0077	0.0/0.01			NA/0.025			0.0005	
Chloroform, mg/l	0.001/0.002	0.00			NA/0.030			0.0002	
Trans-1,2-dichloroethene, mg/l	0.001/0.01	0.00			NA/0.030			0.0004	
1,1,1-Trichloroethane, mg/l	0.001/0.002	0.00			NA/0.025			0.0002	
Vinyl Chloride, mg/l	0.001/0.002	0.00			NA/0.030			0.0007	

PERMITTEE: Carrier Corporation  
FACILITY: Carrier Corporation

DATE: May 18, 2011  
SPDES NO.: NY0001163

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Others									
Oil & Grease, mg/l					15				
WET – Chronic Invertebrate, TUa					1.17				
WET – Chronic Invertebrate, TUa					1.17				



## 2. Water Quality Based Effluent Limit (WQBEL)

Ambient Water Quality Criteria (AWQC) and guidance values specified in "Water Quality Regulations" New York State Codes, Rules and Regulations Title 6, Chapter X, Parts 700-705 and TOGS 1.1.1 were applied to the following pollutants identified in the facilities discharge. Water Quality Based Effluent Limits (WQBEL's) were calculated by applying the TMDL process for each pollutant.

Outfall#	001,002,001A
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Effluent Parameter (Units) (conc.- mg/l, ug/l, ng/l Or mass - lbs/d or g/d)	Existing Effluent Quality				Water Quality Based Effluent Limit					
	quality/conc.		mass		AWQC conc.	Effluent		Type	Basis or Justificat ion	Water Quality Notes
	Avg/Max	95%/99%	Avg/Max	95%/99%		Conc.	mass			
Outfall 001										
Flow Rate, units = MGD	Average	0.558	Maximum	2.76						
pH (SU)	Minimum	8.2	Maximum	8.7	6.5 – 8.5	TBEL ok				
Metals										
Iron, Total, mg/l	6.40/1.09	1.58/7.32			1.0	2.0				
Zinc, Total, mg/l	0.780/0.107	0.14/0.57			0.72	1.4				
Copper, Total, mg/l	0.02/0.02	0.02/0.02			0.07	0.14				
Lead, Total, mg/l	0.017/0.005	0.01/0.02			0.06	0.12				
Manganese, Total, mg/l *	0.028/0.045				Class A only	TBEL ok				
Nickel, Total, mg/l *	0.03/0.03				0.35	0.70				
Organic Compounds										
PCB, Aroclor 1242,ug/l					*	*				1
PCB, Aroclor 1248, ug/l					*	*				1

PCB, Aroclor 1254,ug/l					*	*				1
PCB, Aroclor 1260,ug/l					*	*				1
Trichloroethene, mg/l	0.20/0.027	0.04/0.22			0.04	0.08				
Chloroform*, mg/l	0.001/0.001				Class A only	TBEL ok				
Trans-1,2-dichloroethene, mg/l *	0.001/0.001				Class A only	TBEL ok				
1,1,1-Trichloroethane, mg/l *	0.001/0.001				Class A only	TBEL ok				
Vinyl Chloride, mg/l *	0.001/0.001				Class A only	TBEL ok				
<b>NOTE: *Only three data points were available in the DMR so a statistical analysis was not performed</b>										
<b>Others</b>										
Oil & Grease, mg/l	7.30/5.16				Narr. Std.	TBEL ok				
<b>Outfall 002</b>										
Flow Rate, units = MGD, Daily Average	Average	0.436	Maximum	1.95						
Flow Rate, units = MGD, Daily Maximum										
pH (SU)	Minimum	8.2	Maximum	8.7	6.5-8.5	TBEL ok				
<b>Heavy Metals</b>										
Iron, Total, mg/l	0.738/6.40	0.89/3.62			1.0	2.0				
Zinc, Total, mg/l	0.091/0.54	0.12/0.45			0.72	1.4				
Copper, Total, mg/l	0.02/0.02	0.02/0.02			0.07	0.14				
Lead, Total, mg/l	0.005/0.017	0.01/0.02			0.06	0.12				
Manganese, Total, mg/l					Class A only	TBEL ok				
Nickel, Total, mg/l					0.35	0.70				
<b>Organic Compounds</b>										
PCB, Aroclor 1242,ug/l					*	*				1
PCB, Aroclor 1248, ug/l					*	*				1

PCB, Aroclor 1254,ug/l					*	*				1
PCB, Aroclor 1260,ug/l					*	*				1
Trichloroethene, mg/l	0.063/0.39	0.09/0.39			0.04	0.08				
Chloroform, mg/l					Class A only	TBEL ok				
Trans-1,2-dichloroethene, mg/l	0.005/0.02	0.01/0.04			Class A only	TBEL ok				
1,1,1-Trichloroethane, mg/l					Class A only	TBEL ok				
Vinyl Chloride, mg/l					Class A only	TBEL ok				
<b>Others</b>										
Oil & Grease	5.47/12.7				Narr. Std.	TBEL ok				
<b>Outfall 001A</b>										
Flow Rate, units = MGD, Daily Average	Average	0.266	Maximum	0.998						
Flow Rate, units = MGD, Daily Maximum	Average	0.805	Maximum	1.5						
pH (SU)	Minimum	8.2	Maximum	8.7	6.5-8.5	TBEL ok				
<b>Heavy Metals</b>										
Iron, Total, mg/l	2.24/12	2.92/11.11			1.0	1.3				
Zinc, Total					0.72	0.95				
Copper, Total, mg/l	0.033/0.098	0.04/0.09			0.07	0.09				
Lead, Total, mg/l	0.056/0.012	0.01/0.03			0.06	0.08				
Manganese, Total, mg/l	0.514/1.80	0.77/3.41			Class A only	TBEL ok				
Nickel, Total, mg/l	0.031/0.47	0.03/0.04			0.35	0.46				
<b>Organic Compounds</b>										
PCB, Aroclor 1242,ug/l	0.068/0.5	0.07/0.16			*	*				1
PCB, Aroclor 1248, ug/l	0.068/0.5	0.07/0.16			*	*				1
PCB, Aroclor 1254,ug/l	0.068/0.5	0.07/0.16			*	*				1
PCB, Aroclor 1260,ug/l	0.369/2.5	0.54/2.42			*	*				1

Trichloroethene, mg/l	0.0018/0.0077	0.0/0.01			0.04	0.053				
Chloroform, mg/l	0.001/0.002	0.00			Class A only	TBEL ok				
Trans-1,2-dichloroethene, mg/l	0.001/0.01	0.00			Class A only	TBEL ok				
1,1,1-Trichloroethane, mg/l	0.001/0.002	0.00			Class A only	TBEL ok				
Vinyl Chloride, mg/l	0.001/0.002	0.00			Class A only	TBEL ok				
<b>Others</b>										
Oil & Grease, mg/l					Narr. Std.	TBEL ok				
WET – Chronic Invertebrate, TUa						1.3				
WET – Chronic Invertebrate, TUa						1.3				

1. The W.Q. std. of 0.000001 ug/l applies to the sum of all aroclors. Since Ley Creek is included in the southern Onondaga Lake 2010 303(d) listing for fish consumption due to PCB contamination, the PCB std. will be applied as the WQBEL.